CHEM 2P20
SciFinder Exercise
Presentation
Fall 2024

Ian Gordon

Ian Gordon, Teaching & Learning Librarian

Brock University Library

https://researchguides.library.brocku.ca/CHEM

Chemistry

WELCOME

ARTICLES

BOOKS

CHEMICALS / DRUGS

GREY LITERATURE

DATA

BORROW FROM OTHER LIBRARIES

ADDITIONAL COURSE GUIDES

Need Help?

Ask
Chat with a librarian

Contact us at libhelp@brocku.ca or find more library help on our Research Support page.

What is this guide for?

This guide for chemistry has been designed as a general program guide and is curated by Brock librarians. It features links to most often used resources such as databases for books, peer-reviewed journal articles, theses, dissertations, open educational resources (OEDs), patents, standards, and more. Use the tabs on the left to navigate through the web page.

The ACS Guide to Scholarly Communication is an ACS publication that is constantly updated and provides access to the ACS Quick Style Guide that includes excellent information on writing, scholarship and style.

Chemical Literacy and Writing Chemical Reactions (2022)

Organic Chemistry: 100 Must-know Mechanisms (2023).

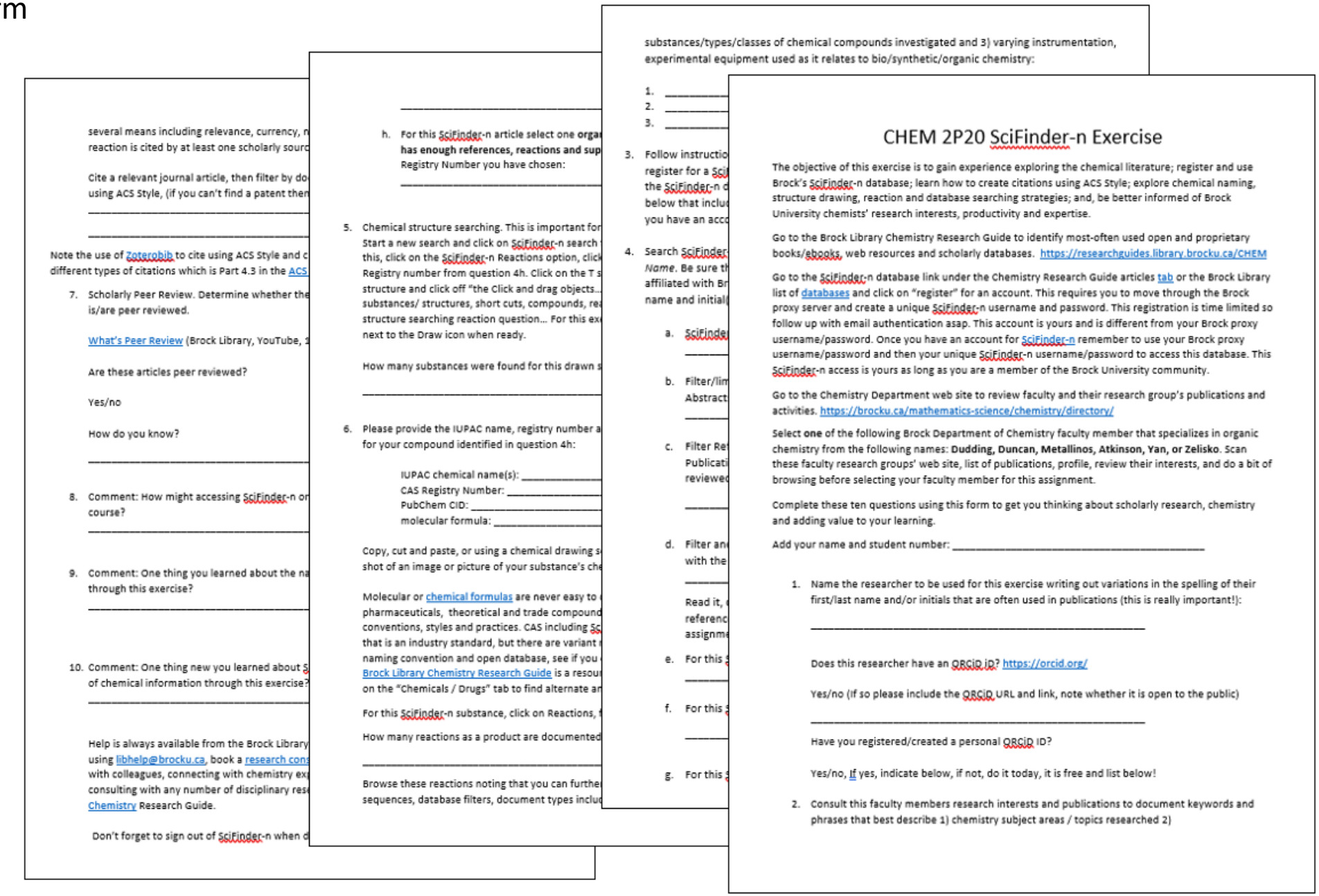
CHEM 3P20 Library Seminar Fall 2024 ppt slides (PDF)

Ian Gordon's Sept 26, 2024 Mathematics & Science Presentation ppt slides (PDF)

CHEM 2P20 SciFinder Exercise Word answer sheet and Pilkington example (2024) PDF

CHEM 2P20 SciFinder Exercise ppt slides (PDF) and YouTube video.

Word form



CHEM 2P20 SciFinder-n Exercise

The objective of this exercise is to gain experience exploring the chemical literature; register and use Brock's SciFinder-n database; learn how to create citations using ACS Style; explore chemical naming, structure drawing, reaction and database searching strategies; and, be better informed of Brock University chemists' research interests, productivity and expertise.

Go to the Brock Library Chemistry Research Guide to identify most-often used open and proprietary books/ebooks, web resources and scholarly databases. https://researchguides.library.brocku.ca/CHEM

Go to the SciFinder-n database link under the Chemistry Research Guide articles tab or the Brock Library list of databases and click on "register" for an account. This requires you to move through the Brock proxy server and create a unique SciFinder-n username and password. This registration is time limited so follow up with email authentication asap. This account is yours and is different from your Brock proxy username/password. Once you have an account for SciFinder-n remember to use your Brock proxy username/password and then your unique SciFinder-n username/password to access this database. This SciFinder-n access is yours as long as you are a member of the Brock University community.

Go to the Chemistry Department web site to review faculty and their research group's publications and activities. https://brocku.ca/mathematics-science/chemistry/directory/

Select **one** of the following Brock Department of Chemistry faculty member that specializes in organic chemistry from the following names: **Dudding, Duncan, Metallinos, Atkinson, Yan, or Zelisko**. Scan these faculty research groups' web site, list of publications, profile, review their interests, and do a bit of browsing before selecting your faculty member for this assignment.

Complete these ten questions using this form to get you thinking about scholarly research, chemistry and adding value to your learning.

Add your name and student number: _____

1. Name the researcher to be used for this exercise writing out variations in the spelling of their first/last name and/or initials that are often used in publications (this is really important!):

   _____

   Does this researcher have an ORCiD iD? https://orcid.org/

   Yes/no (if so please include the ORCiD URL and link, note whether it is open to the public)

   _____

   Have you registered/created a personal ORCiD ID?

   Yes/no, If yes, indicate below, if not, do it today, it is free and list below!

2. Consult this faculty members research interests and publications to document keywords and phrases that best describe 1) chemistry subject areas / topics researched 2)

substances/types/classes of chemical compounds investigated and 3) varying instrumentation, experimental equipment used as it relates to bio/synthetic/organic chemistry:

1. _____
2. _____
3. _____

3. Follow instructio
   register for a Sci
   the SciFinder-n d
   below that inclu
   you have an acc

4. Search SciFinder
   Name. Be sure th
   affiliated with Br
   name and initial

   a. SciFinde
      _____

   b. Filter/lim
      Abstract
      _____

   c. Filter Re
      Publicati
      reviewe
      _____

   d. Filter an
      with the
      _____
      Read it,
      referenc
      assignme

   e. For this
      _____

   f. For this
      _____

   g. For this

h. For this SciFinder-n article select one orga
   has enough references, reactions and sup
   Registry Number you have chosen:
   _____

5. Chemical structure searching. This is important for
   Start a new search and click on SciFinder-n search
   this, click on the SciFinder-n Reactions option, click
   Registry number from question 4h. Click on the T s
   structure and click off "the Click and drag objects...
   substances/ structures, short cuts, compounds, rea
   structure searching reaction question... For this ex
   next to the Draw icon when ready.

   How many substances were found for this drawn s
   _____

6. Please provide the IUPAC name, registry number a
   for your compound identified in question 4h:

   IUPAC chemical name(s): _____
   CAS Registry Number: _____
   PubChem CID: _____
   molecular formula: _____

   Copy, cut and paste, or using a chemical drawing s
   shot of an image or picture of your substance's che

   Molecular or chemical formulas are never easy to
   pharmaceuticals, theoretical and trade compound
   conventions, styles and practices. CAS including Sc
   that is an industry standard, but there are variant
   naming convention and open database, see if you
   Brock Library Chemistry Research Guide is a resou
   on the "Chemicals / Drugs" tab to find alternate ar

   For this SciFinder-n substance, click on Reactions,

   How many reactions as a product are documented
   _____

   Browse these reactions noting that you can furthe
   sequences, database filters, document types inclu

several means including relevance, currency, r
reaction is cited by at least one scholarly sourc

Cite a relevant journal article, then filter by do
using ACS Style, (if you can't find a patent then
_____
_____

Note the use of Zoterobib to cite using ACS Style and c
different types of citations which is Part 4.3 in the ACS

7. Scholarly Peer Review. Determine whether the
   is/are peer reviewed.

   What's Peer Review (Brock Library, YouTube, 1

   Are these articles peer reviewed?

   Yes/no

   How do you know?

   _____

8. Comment: How might accessing SciFinder-n or
   course?
   _____

9. Comment: One thing you learned about the na
   through this exercise?
   _____

10. Comment: One thing new you learned about S
    of chemical information through this exercise?
    _____

Help is always available from the Brock Library
using libhelp@brocku.ca, book a research cons
with colleagues, connecting with chemistry ex
consulting with any number of disciplinary res
Chemistry Research Guide.

Don't forget to sign out of SciFinder-n when d

Select one of the following Brock Department of Chemistry faculty member that specializes in organic chemistry from the following names: Dudding, Duncan, Metallinos, Atkinson, Yan, or Zelisko. Scan these faculty research groups' web site, list of publications, profile, review their interests, and do a bit of browsing before selecting your faculty member for this assignment.

https://brocku.ca/mathematics-science/chemistry/directory/

Brock University

Faculty of Mathematics & Science
Chemistry

APPLY @ BROCK

Search with Google

Home | About Us | Academic Programs | Research | Safety | People | Contact us | Team Site | IDW2022 | NASS2025

Brock University › Chemistry ›

Organic Chemistry

Jeffrey Atkinson
Professor
Office: Cairns 416
Lab: Cairns 457 and 542
905 688 5550 x3967
jatkinson@brocku.ca

Travis Dudding
Professor
Office: Cairns 519
905 688 5550 x3405
tdudding@brocku.ca

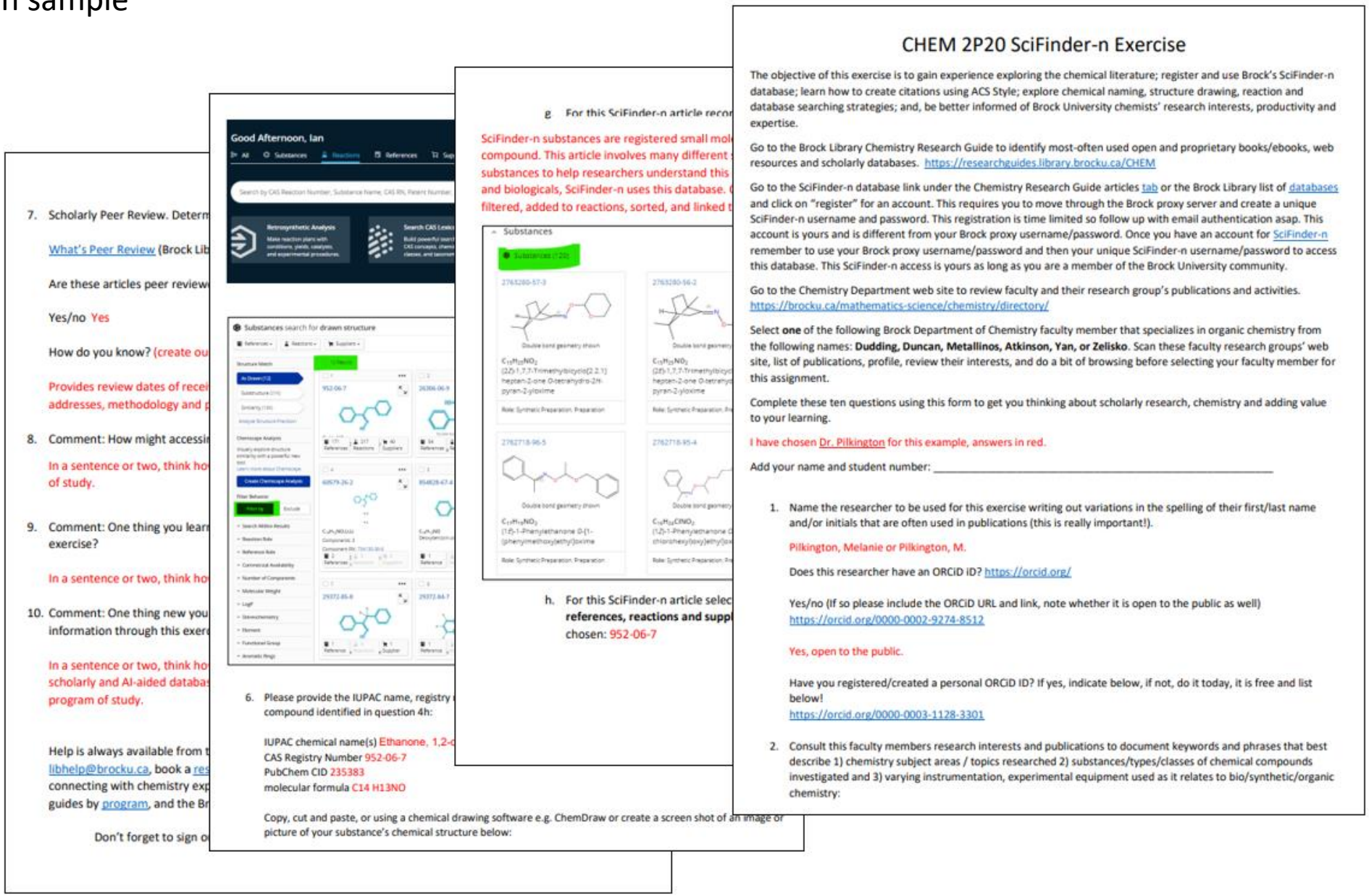
Dustin Duncan
Assistant Professor
Office: Cairns 516
905 688 5550 x6232
dduncan@brocku.ca

Costa Metallinos
Professor
Office: Cairns 518
Lab: Cairns 542
905 688 5550 x3848
metallic@brocku.ca

Hongbin (Tony) Yan
Professor
Office: Cairns 415
Lab: Cairns 542
Office Phone: 905 688 5550 x3545
Lab Phone: 905 688 5550 x3411
tyan@brocku.ca

Paul Zelisko
Associate Professor
Office: Cairns 520
Lab: MCH 221
Office Phone: 905 688 5550 x4389
Lab Phone: 905 688 5550 x4258
pzelisko@brocku.ca

Pilkington sample



CHEM 2P20 SciFinder-n Exercise

The objective of this exercise is to gain experience exploring the chemical literature; register and use Brock's SciFinder-n database; learn how to create citations using ACS Style; explore chemical naming, structure drawing, reaction and database searching strategies; and, be better informed of Brock University chemists' research interests, productivity and expertise.

Go to the Brock Library Chemistry Research Guide to identify most-often used open and proprietary books/ebooks, web resources and scholarly databases. https://researchguides.library.brocku.ca/CHEM

Go to the SciFinder-n database link under the Chemistry Research Guide articles tab or the Brock Library list of databases and click on "register" for an account. This requires you to move through the Brock proxy server and create a unique SciFinder-n username and password. This registration is time limited so follow up with email authentication asap. This account is yours and is different from your Brock proxy username/password. Once you have an account for SciFinder-n remember to use your Brock proxy username/password and then your unique SciFinder-n username/password to access this database. This SciFinder-n access is yours as long as you are a member of the Brock University community.

Go to the Chemistry Department web site to review faculty and their research group's publications and activities. https://brocku.ca/mathematics-science/chemistry/directory/

Select **one** of the following Brock Department of Chemistry faculty member that specializes in organic chemistry from the following names: **Dudding, Duncan, Metallinos, Atkinson, Yan, or Zelisko**. Scan these faculty research groups' web site, list of publications, profile, review their interests, and do a bit of browsing before selecting your faculty member for this assignment.

Complete these ten questions using this form to get you thinking about scholarly research, chemistry and adding value to your learning.

I have chosen Dr. Pilkington for this example, answers in red.

Add your name and student number: _____

1. Name the researcher to be used for this exercise writing out variations in the spelling of their first/last name and/or initials that are often used in publications (this is really important!).

   Pilkington, Melanie or Pilkington, M.

   Does this researcher have an ORCiD iD? https://orcid.org/

   Yes/no (If so please include the ORCiD URL and link, note whether it is open to the public as well)
   https://orcid.org/0000-0002-9274-8512

   Yes, open to the public.

   Have you registered/created a personal ORCiD ID? If yes, indicate below, if not, do it today, it is free and list below!
   https://orcid.org/0000-0003-1128-3301

2. Consult this faculty members research interests and publications to document keywords and phrases that best describe 1) chemistry subject areas / topics researched 2) substances/types/classes of chemical compounds investigated and 3) varying instrumentation, experimental equipment used as it relates to bio/synthetic/organic chemistry:

7. Scholarly Peer Review. Determ

   What's Peer Review (Brock Lib

   Are these articles peer review

   Yes/no Yes

   How do you know? (create ou

   Provides review dates of recei
   addresses, methodology and p

8. Comment: How might accessi

   In a sentence or two, think ho
   of study.

9. Comment: One thing you learn
   exercise?

   In a sentence or two, think ho

10. Comment: One thing new you
    information through this exer

    In a sentence or two, think ho
    scholarly and AI-aided databa
    program of study.

Help is always available from t
libhelp@brocku.ca, book a res
connecting with chemistry exp
guides by program, and the Br

Don't forget to sign o

Good Afternoon, Ian

Substances search for drawn structure

6. Please provide the IUPAC name, registry
   compound identified in question 4h:

   IUPAC chemical name(s) Ethanone, 1,2-c
   CAS Registry Number 952-06-7
   PubChem CID 235383
   molecular formula C14 H13NO

   Copy, cut and paste, or using a chemical drawing software e.g. ChemDraw or create a screen shot of an image or picture of your substance's chemical structure below:

g. For this SciFinder-n article recor

SciFinder-n substances are registered small mol
compound. This article involves many different
substances to help researchers understand this
and biologicals, SciFinder-n uses this database.
filtered, added to reactions, sorted, and linked t

Substances

h. For this SciFinder-n article selec
references, reactions and suppl
chosen: 952-06-7

Chemistry

Chemistry retrofit guide by Ian

- WELCOME
- ARTICLES
- BOOKS
- CHEMICALS / DRUGS
- GREY LITERATURE
- DATA
- BORROW FROM OTHER LIBRARIES
- ADDITIONAL COURSE GUIDES

Need Help?

Ask
Chat with a librarian

Contact us at libhelp@brocku.ca or find more library help on our Research Support page.

Articles

Journal articles are scholarly works that go through a quality control process called peer-review before they are published.

Several databases provide access to regional, national and international news articles.

A select list of databases that include scholarly articles are listed below.

The ACS Guide to Scholarly Communication is an ACS publication that is constantly updated and provides access to the ACS Quick Style Guide that includes excellent information on writing, scholarship and style.

- Google Scholar Open Access Alumni Access
  - Find Peer-reviewed papers, theses, books, abstracts and artic… societies, repositories, universities and other scholarly o…
  - Off-Campus access to Brock resources is available to users … follows:
    1. Click on Scholar Settings
    2. Select 'Library links' from the left menu
    3. Type Brock in the Library links box, and click the search icon
    4. Select Brock in the resulting list
    5. Click on the 'Save' button
    6. Follow the Find it @ Brock links to access available full-text.
- Web of Science Core Collection
  - Scholarly resources across all disciplines
  - Access to Cited Reference searching
  - Permitted Uses

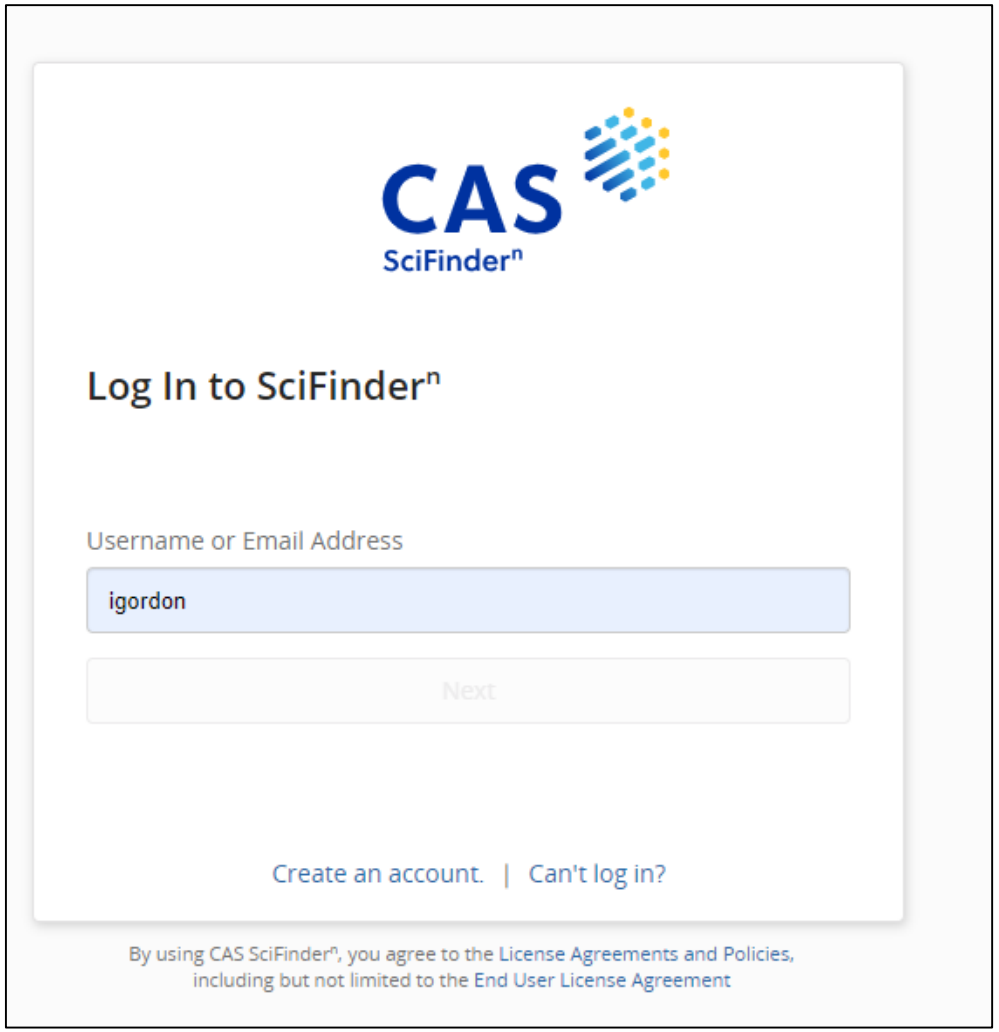
more info...

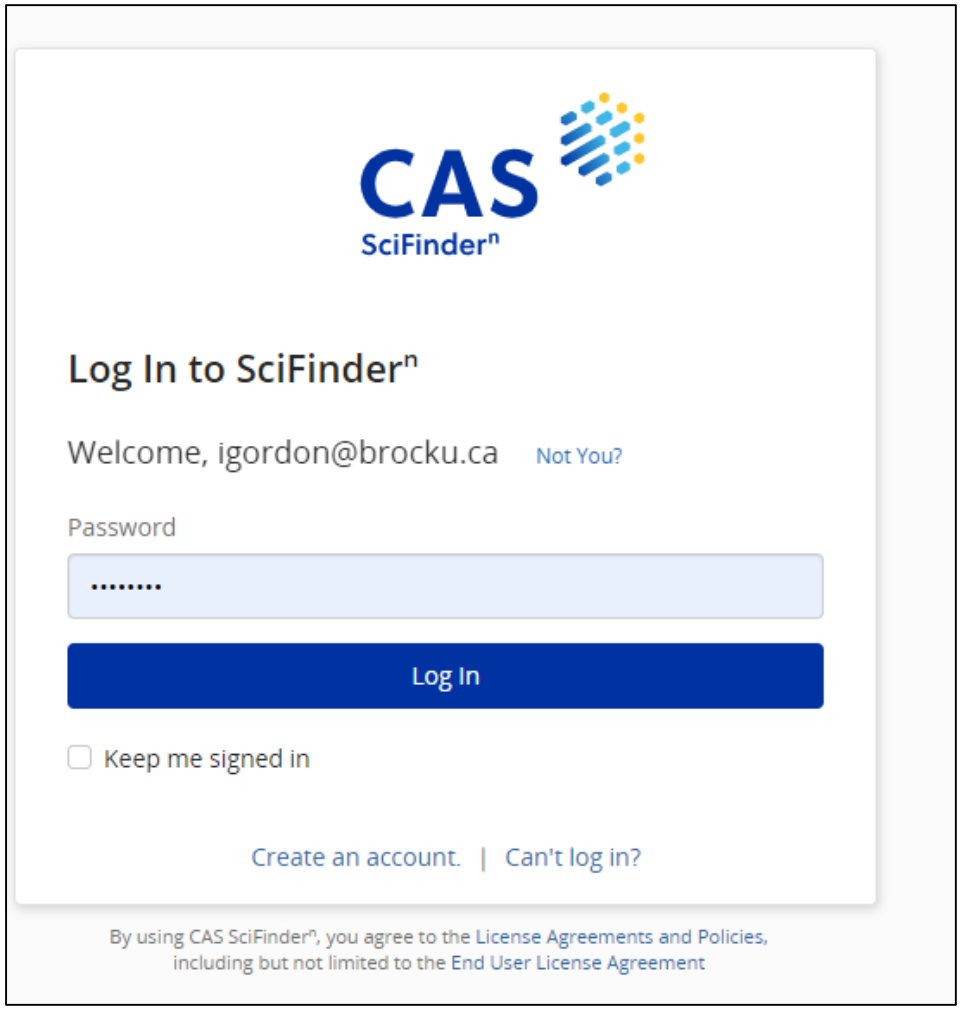
- SciFinder-n
  - Core chemistry, medicine, health, environmental and scientific journals, patents from international agencies, single and multi-step reactions, predicted and experimental property values, reports and dissertations from 1800s-present.
  - SciFinder-n is a completely different and updated interface to the classic CAS SciFinder database, with improved search algorithm and added features
  - Includes CAplus, MEDLINE, CAS Registry, and CASREACTS
  - Features include Retrosynthesis, Biosequence, PatentPak, and Methods Synthesis
  - For access on and off campus - register for account, create username & password, confirm registration by e-mail
  - Disable pop-up blocking while acces…
  - Permitted Uses

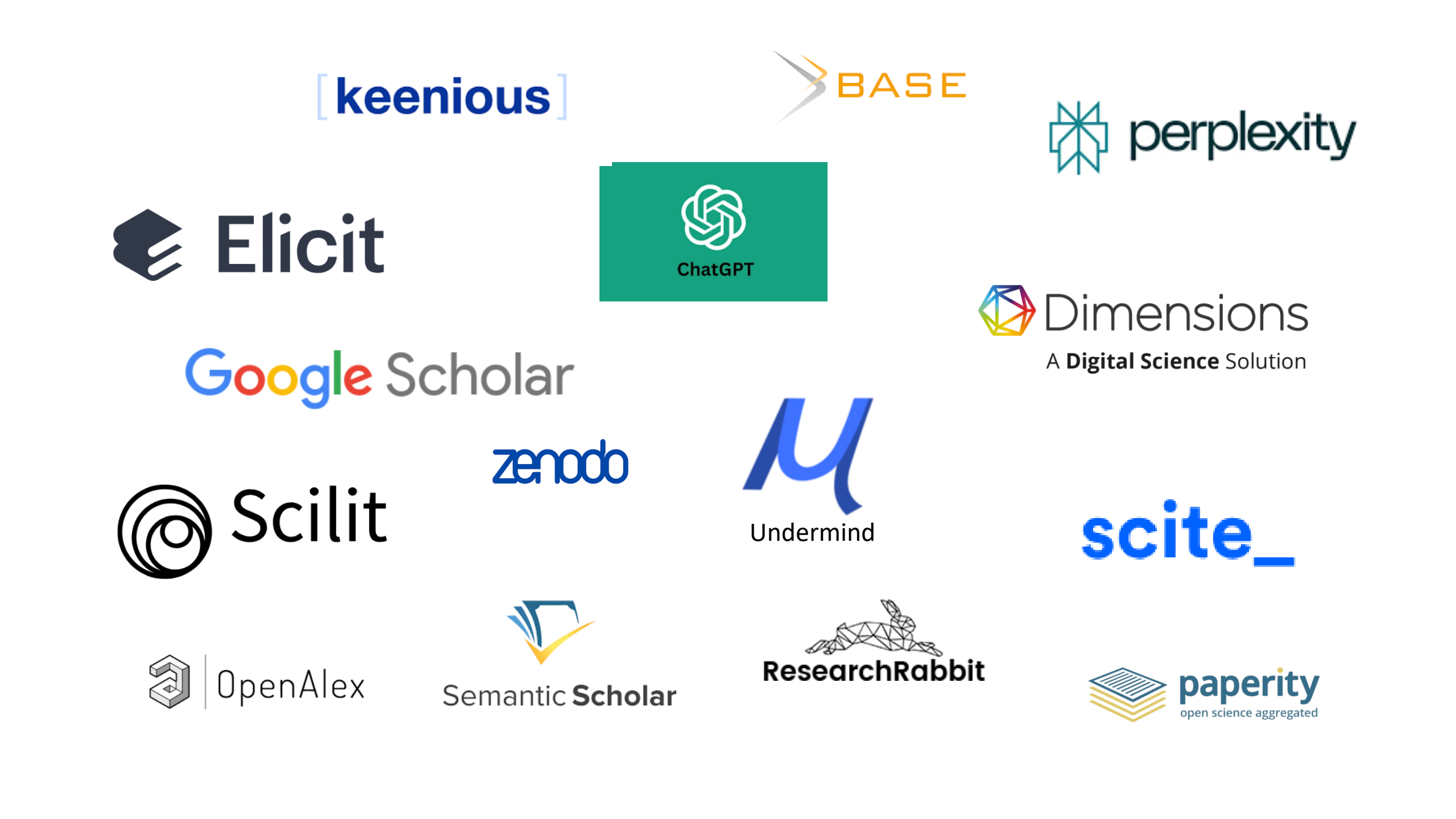
more info...

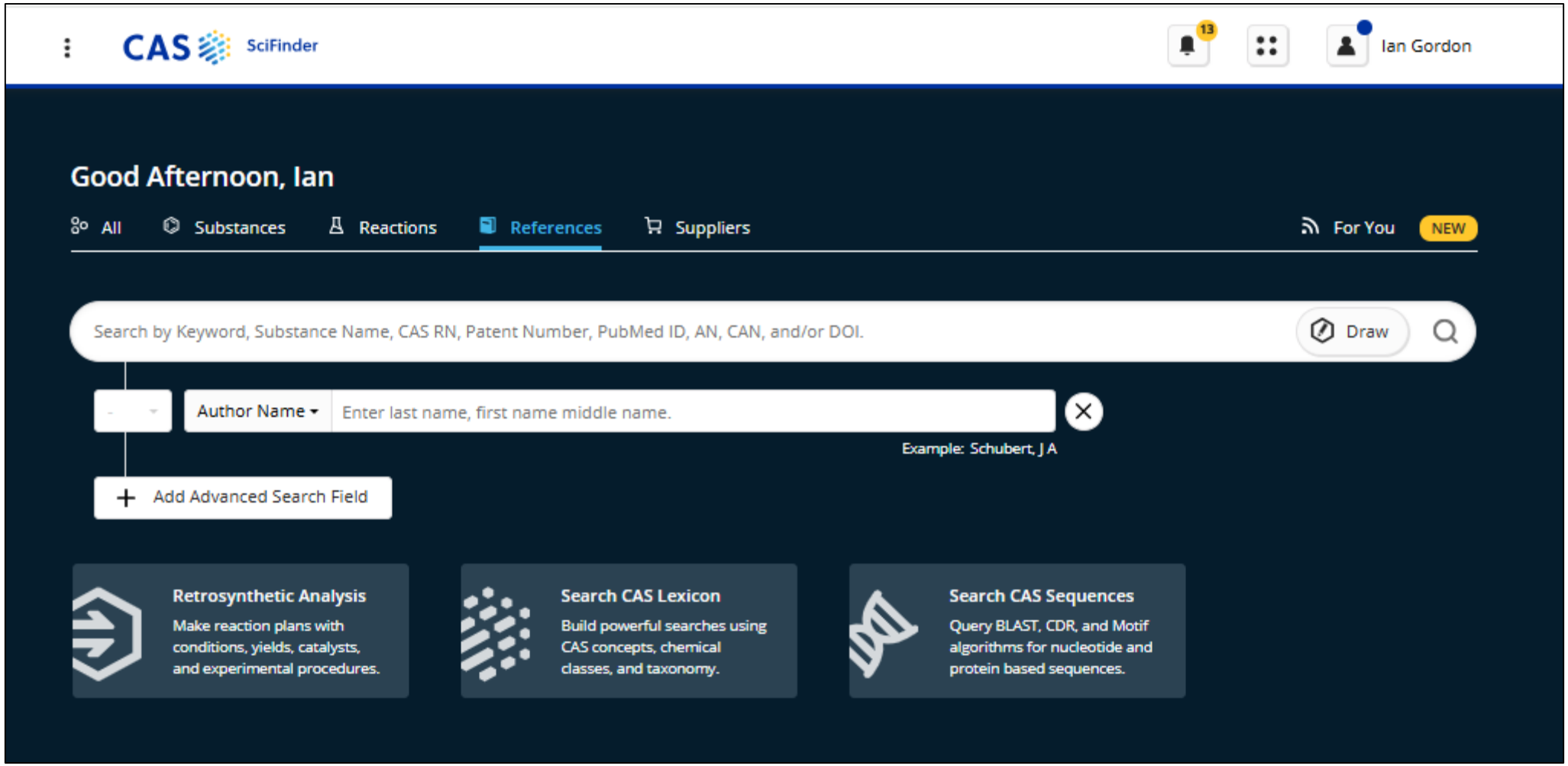
- Reaxys
  - Find chemical structures, reactions, and properties.
  - Useful for researching synthetic methods of chemical compounds, characterizing synthesized compounds, or searching for critically evaluated data on physical, chemical, spectral, bioactivity, or toxicological properties.
  - Includes Beilstein (to 1959, Supplement IV); Gmelin (to 1975); and selected organic chemistry patents (1869-1980) with English-language chemical patents (US, WO, EP, 1976+) from selected primary IPC classes.
  - For full usability set up an individual account for access on and off campus. Java and JRE plugins may be required.
  - Permitted Uses

https://researchguides.library.brocku.ca/database-scifinder


CAS
SciFinder
Log In to SciFinder
Username or Email Address
igordon
Next
Create an account. | Can't log in?
By using CAS SciFinder, you agree to the License Agreements and Policies, including but not limited to the End User License Agreement


CAS
SciFinder
Log In to SciFinder
Welcome, igordon@brocku.ca Not You?
Password
Log In
Keep me signed in
Create an account. | Can't log in?
By using CAS SciFinder, you agree to the License Agreements and Policies, including but not limited to the End User License Agreement


keenious
BASE
perplexity
Elicit
ChatGPT
Dimensions
A Digital Science Solution
Google Scholar
zenodo
Undermind
Scilit
scite_
OpenAlex
Semantic Scholar
ResearchRabbit
paperity
open science aggregated


CAS SciFinder
13
Ian Gordon
Good Afternoon, Ian
All
Substances
Reactions
References
Suppliers
For You
NEW
Search by Keyword, Substance Name, CAS RN, Patent Number, PubMed ID, AN, CAN, and/or DOI.
Draw
Author Name
Enter last name, first name middle name.
Example: Schubert, J A
Add Advanced Search Field
Retrosynthetic Analysis
Make reaction plans with conditions, yields, catalysts, and experimental procedures.
Search CAS Lexicon
Build powerful searches using CAS concepts, chemical classes, and taxonomy.
Search CAS Sequences
Query BLAST, CDR, and Motif algorithms for nucleotide and protein based sequences.

Thymine-Modified Silicones: A Bioinspired Approach to Cross-Linked, Recyclable Silicone Polymers

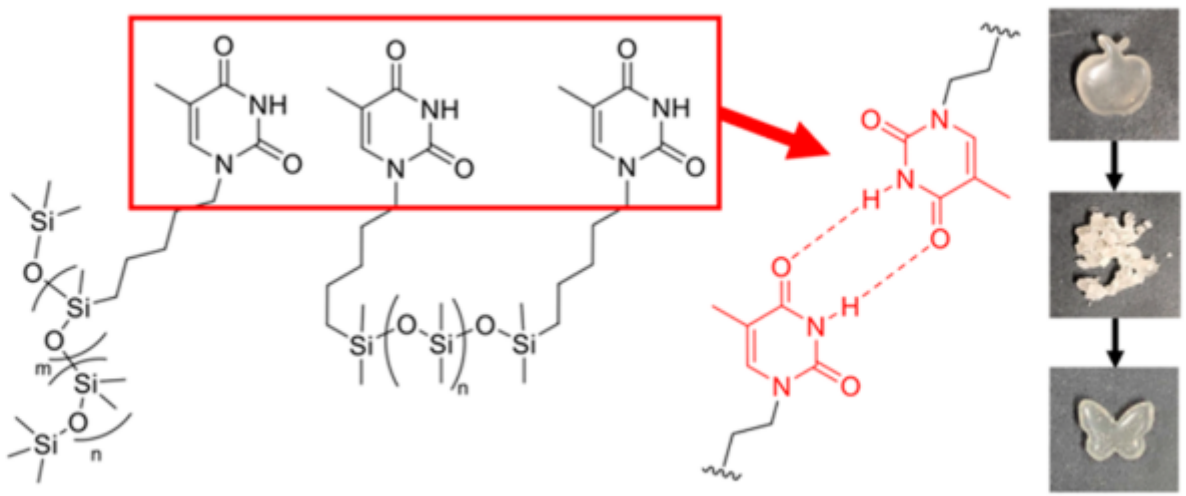
8 0 3 Citation Map

In this Reference
- Concepts
- Substances
- Cited Documents

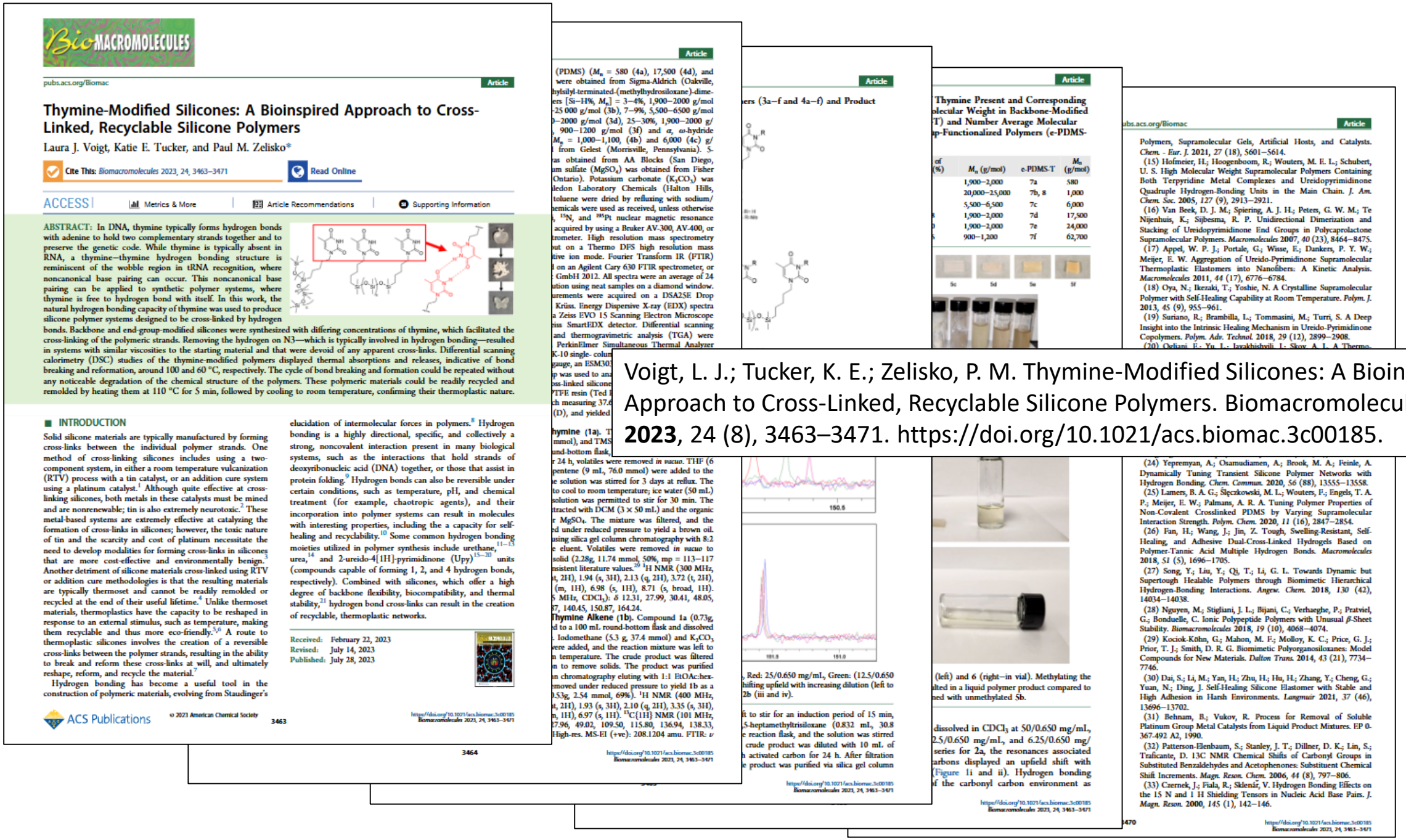
By: Voigt, Laura J.; Tucker, Katie E.; Zelisko, Paul M.

DOI: 10.1021/acs.biomac.3c00185

In DNA, thymine typically forms hydrogen bonds with adenine to hold two complementary strands together and to preserve the genetic code. While thymine is typically absent in RNA, a thymine-thymine hydrogen bonding structure is reminiscent of the wobble region in tRNA recognition, where noncanonical base pairing can occur. This noncanonical base pairing can be applied to synthetic polymer systems, where thymine is free to hydrogen bond with itself. In this work, the natural hydrogen bonding capacity of thymine was used to produce silicone polymer systems designed to be cross-linked by hydrogen bonds. Backbone and end-group-modified silicones were synthesized with differing concentrations of thymine, which facilitated the crosslinking of the polymeric strands. Removing the hydrogen on N3-which is typically involved in hydrogen bonding-resulted in systems with similar viscosities to the starting material and that were devoid of any apparent cross-links. Differential scanning calorimetry (DSC) studies of the thymine-modified polymers displayed thermal absorptions and releases, indicative of bond breaking and reformation, around 100 and 60 °C, resp. The cycle of bond breaking and formation could be repeated without any noticeable degradation of the chem. structure of the polymers. These polymeric materials could be readily recycled and remolded by heating them at 110 °C for 5 min, followed by cooling to room temperature, confirming their thermoplastic nature.



Keywords: thymine silicone polymer dna

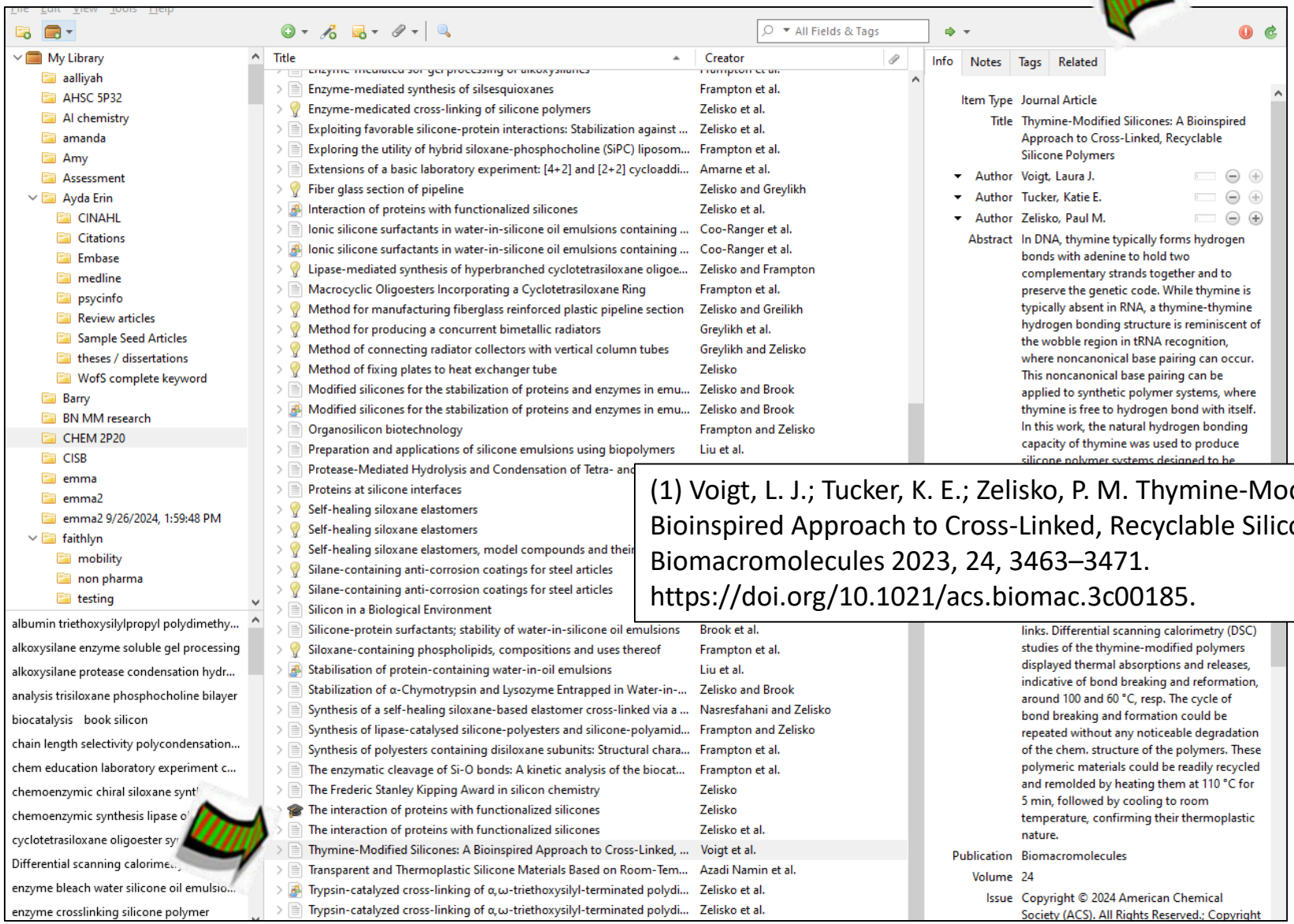


Voigt, L. J.; Tucker, K. E.; Zelisko, P. M. Thymine-Modified Silicones: A Bioinspired Approach to Cross-Linked, Recyclable Silicone Polymers. Biomacromolecules **2023**, 24 (8), 3463–3471. https://doi.org/10.1021/acs.biomac.3c00185.

https://zbib.org/

https://www.zotero.org/

zotero


All Fields & Tags
My Library
aalliyah
AHSC 5P32
AI chemistry
amanda
Amy
Assessment
Ayda Erin
CINAHL
Citations
Embase
medline
psycinfo
Review articles
Sample Seed Articles
theses / dissertations
WofS complete keyword
Barry
BN MM research
CHEM 2P20
CISB
emma
emma2
emma2 9/26/2024, 1:59:48 PM
faithlyn
mobility
non pharma
testing
albumin triethoxysilylpropyl polydimethy...
alkoxysilane enzyme soluble gel processing
alkoxysilane protease condensation hydr...
analysis trisiloxane phosphocholine bilayer
biocatalysis book silicon
chain length selectivity polycondensation...
chem education laboratory experiment c...
chemoenzymic chiral siloxane synt
chemoenzymic synthesis lipase o
cyclotetrasiloxane oligoester sy
Differential scanning calorime
enzyme bleach water silicone oil emulsio...
enzyme crosslinking silicone polymer
Title
Creator
Enzyme-mediated synthesis of silsesquioxanes Frampton et al.
Enzyme-medicated cross-linking of silicone polymers Zelisko et al.
Exploiting favorable silicone-protein interactions: Stabilization against ... Zelisko et al.
Exploring the utility of hybrid siloxane-phosphocholine (SiPC) liposom... Frampton et al.
Extensions of a basic laboratory experiment: [4+2] and [2+2] cycloaddi... Amarne et al.
Fiber glass section of pipeline Zelisko and Greylikh
Interaction of proteins with functionalized silicones Zelisko et al.
Ionic silicone surfactants in water-in-silicone oil emulsions containing ... Coo-Ranger et al.
Ionic silicone surfactants in water-in-silicone oil emulsions containing ... Coo-Ranger et al.
Lipase-mediated synthesis of hyperbranched cyclotetrasiloxane oligoe... Zelisko and Frampton
Macrocyclic Oligoesters Incorporating a Cyclotetrasiloxane Ring Frampton et al.
Method for manufacturing fiberglass reinforced plastic pipeline section Zelisko and Greilikh
Method for producing a concurrent bimetallic radiators Greylikh et al.
Method of connecting radiator collectors with vertical column tubes Greylikh and Zelisko
Method of fixing plates to heat exchanger tube Zelisko
Modified silicones for the stabilization of proteins and enzymes in emu... Zelisko and Brook
Modified silicones for the stabilization of proteins and enzymes in emu... Zelisko and Brook
Organosilicon biotechnology Frampton and Zelisko
Preparation and applications of silicone emulsions using biopolymers Liu et al.
Protease-Mediated Hydrolysis and Condensation of Tetra- and
Proteins at silicone interfaces
Self-healing siloxane elastomers
Self-healing siloxane elastomers
Self-healing siloxane elastomers, model compounds and their
Silane-containing anti-corrosion coatings for steel articles
Silane-containing anti-corrosion coatings for steel articles
Silicon in a Biological Environment
Silicone-protein surfactants; stability of water-in-silicone oil emulsions Brook et al.
Siloxane-containing phospholipids, compositions and uses thereof Frampton et al.
Stabilisation of protein-containing water-in-oil emulsions Liu et al.
Stabilization of α-Chymotrypsin and Lysozyme Entrapped in Water-in-... Zelisko and Brook
Synthesis of a self-healing siloxane-based elastomer cross-linked via a ... Nasresfahani and Zelisko
Synthesis of lipase-catalysed silicone-polyesters and silicone-polyamid... Frampton and Zelisko
Synthesis of polyesters containing disiloxane subunits: Structural chara... Frampton et al.
The enzymatic cleavage of Si-O bonds: A kinetic analysis of the biocat... Frampton et al.
The Frederic Stanley Kipping Award in silicon chemistry Zelisko
The interaction of proteins with functionalized silicones Zelisko
The interaction of proteins with functionalized silicones Zelisko et al.
Thymine-Modified Silicones: A Bioinspired Approach to Cross-Linked, ... Voigt et al.
Transparent and Thermoplastic Silicone Materials Based on Room-Tem... Azadi Namin et al.
Trypsin-catalyzed cross-linking of α,ω-triethoxysilyl-terminated polydi... Zelisko et al.
Trypsin-catalyzed cross-linking of α,ω-triethoxysilyl-terminated polydi... Zelisko et al.
Info
Notes
Tags
Related
Item Type Journal Article
Title Thymine-Modified Silicones: A Bioinspired Approach to Cross-Linked, Recyclable Silicone Polymers
Author Voigt, Laura J.
Author Tucker, Katie E.
Author Zelisko, Paul M.
Abstract In DNA, thymine typically forms hydrogen bonds with adenine to hold two complementary strands together and to preserve the genetic code. While thymine is typically absent in RNA, a thymine-thymine hydrogen bonding structure is reminiscent of the wobble region in tRNA recognition, where noncanonical base pairing can occur. This noncanonical base pairing can be applied to synthetic polymer systems, where thymine is free to hydrogen bond with itself. In this work, the natural hydrogen bonding capacity of thymine was used to produce
links. Differential scanning calorimetry (DSC) studies of the thymine-modified polymers displayed thermal absorptions and releases, indicative of bond breaking and reformation, around 100 and 60 °C, resp. The cycle of bond breaking and formation could be repeated without any noticeable degradation of the chem. structure of the polymers. These polymeric materials could be readily recycled and remolded by heating them at 110 °C for 5 min, followed by cooling to room temperature, confirming their thermoplastic nature.
Publication Biomacromolecules
Volume 24
Issue
Copyright © 2024 American Chemical Society (ACS). All Rights Reserved.; Copyright

(1) Voigt, L. J.; Tucker, K. E.; Zelisko, P. M. Thymine-Modified Silicones: A Bioinspired Approach to Cross-Linked, Recyclable Silicone Polymers. Biomacromolecules 2023, 24, 3463–3471. https://doi.org/10.1021/acs.biomac.3c00185.

Where can I get help with seeking information?

Brock Library CHEM Research Guide
https://researchguides.library.brocku.ca/CHEM

Email the Library
libhelp@brocku.ca

Ask Us Chat service
https://brocku.ca/library/chat/

Ask Us Chat

Get Help
https://brocku.ca/library/research-support/

Book a Consultation
https://calendar.library.brocku.ca/appointments/researchconsultation

Brock University / Appointments

Make an Appointment Research Consultation

Your Librarian can help you:

- use the best search tools for your assignments
- find information sources on your specific topic
- develop effective research strategies
- become a confident and independent researcher

1. Select One

Librarian

- ○ Justine Cotton
- ◉ Ian Gordon (he/him)
- ○ Jennifer Thiessen
- ○ Elizabeth Yates
- ○ Kymberly Ash
- ○ Vanja Stojanovic

2. Select Date:

Dec 2024

Su	Mo	Tu	We	Th	Fr	Sa
1	2	3	4	5	6	7
8	9	10	11	12	13	14
15	16	17	18	19	20	21
22	23	24	25	26	27	28
29	30	31				

3. Select Time:

Wednesday, December 4, 2024

Time Zone: Eastern Time - US & Canada (change)

10:00am | 11:00am | 11:30am

12:30pm | 1:00pm | 1:30pm

3:00pm | 3:30pm

Continue

Ian Gordon

Teaching & Learning Librarian
igordon@brocku.ca